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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: August 4, 2003

To: Dan Chesterson
Brownfields/SI SectionThru: Craig Barker
Steve BuckelFrom: Craig A. Pender
OLQ Chemistry SectionSubject: Analytical Results for Beck's Lake
South Bend, St. Joseph Co., Indiana
Site # IND980904379
Sampled: July 16, 2003
Sample Numbers: S1 - S22
Laboratory: CEIMIC

The analytical results for the samples identified above have been validated according to the quality criteria contained in RISC Technical Guidance Manual and Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Update III. Based on the evaluation, it has been determined that the results are acceptable for use. Reasons that data are qualified as estimated or unusable are explained below.

General Comments:

The purpose of this event is unknown since no field documentation was included with the data package. The collected samples were analyzed for metals (Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc).

Sampling Quality Assurance/Quality Control:

Field documentation did not allow for interpretation of the data. No field documentation was included with the data package. No interpretation of the data can be made.

Field duplicate samples are used to establish the representativeness of field sampling (i.e., the homogeneity and sample variability). The duplicate samples for this study were not in good agreement. Results for Silver, Chromium, and Magnesium are estimated.

Field blanks (trip and/or equipment) are used to identify sample contamination resulting from sampling equipment, sample containers, chemical preservatives, and the handling and

transportation of samples. The trip blank was not needed because VOC samples were not collected. It is unknown if an equipment blank was collected. Since no field documentation was included, it is unknown how the samples were collected (i.e. if dedicated equipment was used or not).

It can't be determined if the sample holding time requirements were met for these samples. The date the samples were received at the lab was reported, but not the analysis date. The laboratory should report the analysis date in future sample analysis. All sample results will be estimated.

Laboratory Quality Assurance/Quality Control:

The laboratory performed all quality assurance/quality control (QA/QC) measures necessary to validate the analytical results for this sampling event. The data was determined to be valid. Based on the validation of the analytical results, the following comments and/or qualifications are made regarding the data:

Metals Analysis

Samples were analyzed for Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES). Most criteria were satisfactory.

Aluminum, Barium, Beryllium, Calcium, Magnesium, Nickel, Cobalt, Sodium, Copper, Iron, Manganese, and Cadmium were detected in both the initial and continuing calibration blanks (ICB and CCB). The results for these compounds will be estimated.

Lead had a low percent recovery in the ICP interference check sample analysis (ICS). Results for Lead will be estimated.

Antimony and Selenium had low Matrix Spike recoveries. Results for Antimony and Selenium will be estimated biased low due to possible matrix interference.

Arsenic, Beryllium, Cadmium, Calcium, Cobalt, Copper, Magnesium, Potassium and Sodium had ICP Serial Dilution Analysis percent difference (%D) greater than the control limit of 10%. Results for these compounds will be estimated.

Antimony, Selenium, and Thallium were analyzed using laboratory reporting limits above their respective RISC Residential Default Closure Levels. In future sampling events, the laboratory should use a method to obtain lower reporting limits for these compounds.

Mercury Analysis

Samples were analyzed for Mercury by Cold Vapor Atomic Absorption (CVAA). All criteria were satisfactory.

Results:

Arsenic and Lead were detected above their respective RISC Residential Default Closure Levels (3.9 ppm and 81 ppm respectively) in several of the soil samples collected. Antimony was detected in sample S1 and S22 (2nd duplicate sample) above its RISC Residential Default Closure Level of 5.4 ppm. Cadmium was detected in samples S11 (2nd duplicate sample) and S22 (2nd duplicate sample) above its RISC Residential Default Closure Level of 7.5 ppm. Selenium was detected in sample S11 (2nd duplicate sample) above its RISC Residential Default Closure Level of 5.2 ppm. Thallium was detected in samples S11 (2nd duplicate sample) and S22 (2nd duplicate sample) above its RISC Residential Default Closure Level of 2.8 ppm. See attached tables for complete sample results. Chromium was detected in samples S2, S11 (2nd duplicate sample), S19 and S22 (2nd duplicate sample) above its RISC Residential Default Closure Level of 38 ppm.

Conclusions:

Several estimated sample results are above RISC Residential Default Closure Levels. The data is usable, however, no further interpretation of data can be made since sample locations and the project goals are unknown.

Attachments